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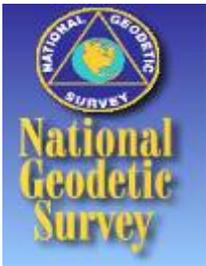


Performance Evaluation of New Orleans and Southeast Louisiana Hurricane Protection System

Data Collection, Management and Datum



Interagency Performance Evaluation Task Force (IPET)





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Outline

- **Data Collection**
- **Data Management**
- **Datum**



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Data Collection

- **The data collection was the first and most important task for IPET to get underway after the hurricane.**



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Data Collection

- **Performance Evaluation requires:**
 - **Pre-Katrina conditions of the Hurricane Protection system (HPS)**
 - **Events that occurred during Katrina**
 - **The effects of Katrina on the system.**



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Data Needed

- **Design Documents**
- **Construction and as-built records**
- **Profile, topographic, and section surveys**
- **Inspection Reports**
- **Field Investigations and Inspections**
- **Public interviews, forums or meetings**
- **Levee design heights**
- **Levee properties**
- **Aerial Photos, Videos**
- **Data and analyses by other agencies, private firms**
- **Time history of surge heights, wind speed/direction, waves**
- **Photos, videos, measurements of erosion near breaches**
- **Wall deflections**
- **Evidence of wall yielding**
- **Pump Station data (locations, elevations, discharge pool locations, optional discharge directions, performance, operators)**
- **Sheet-pile tip elevations (design, as-built, measured) for all I-walls**
- **Pool-to-pool heads during storm**
- **Any other data and observations relevant to IPET**



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Data Collection

- **Data collected on the system in these three areas will form the basis for the IPET performance evaluation**
- **Data Collection Plan components**
 - **Perishable data**
 - **Background/System data**
 - **New data**



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Perishable data

- **Even before the IPET was fully formed, an initial team of engineers and scientists were deployed to the New Orleans area to identify and collect the critical data needed to accurately portray the performance of the system with a focus on capturing data that might otherwise be perishable.**



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Perishable data

- **Breach Configurations:**
 - locations, depth, width, descriptions, photos, erosion extents, date and time started and date and time fully developed
- **Damage Survey Reports:**
 - project/site, location, x,y,z, description, photos, date, time, reference point for survey



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London Avenue Canal North Near the Robert E. Lee Bridge

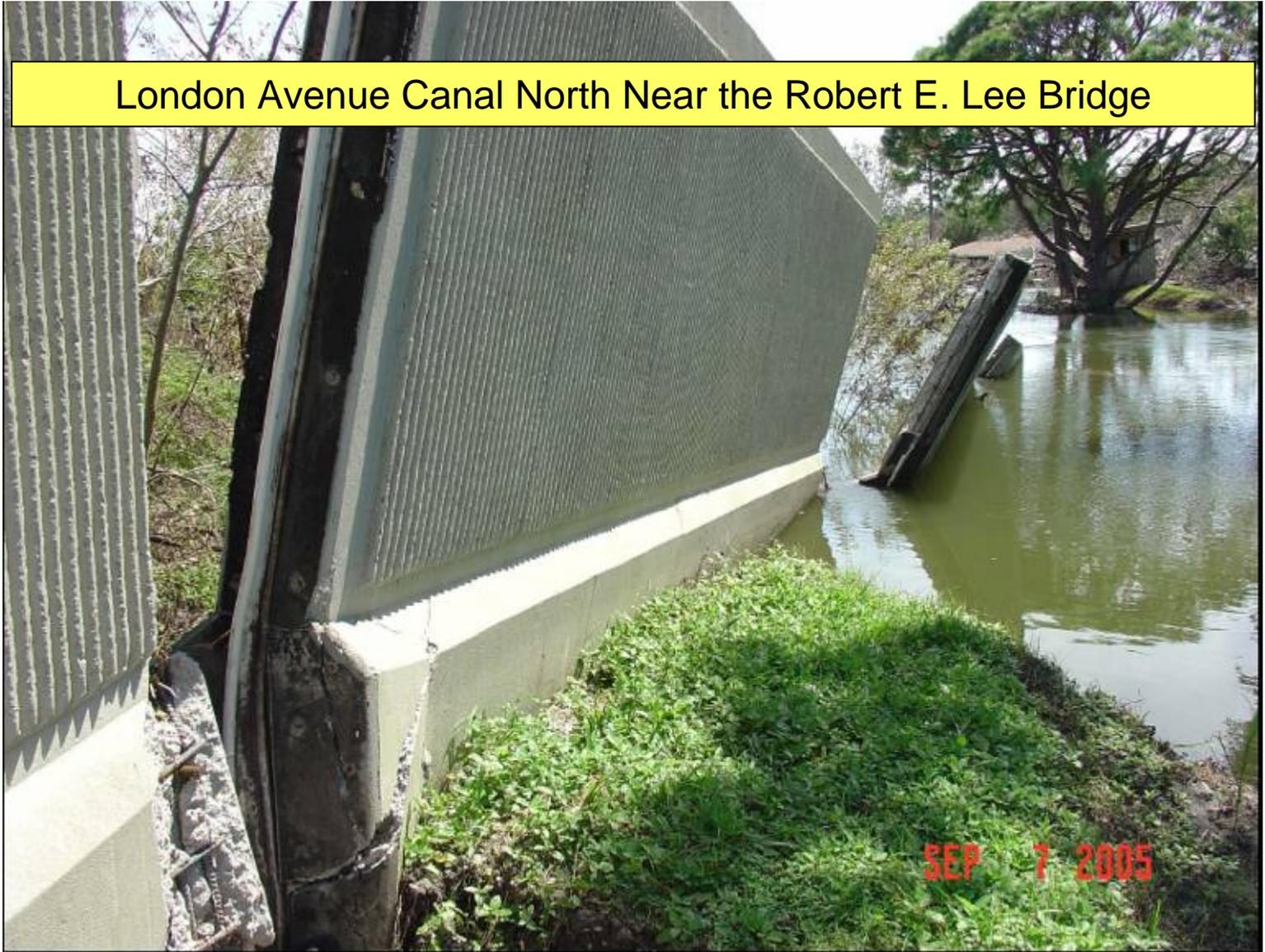


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London Avenue Canal North Near the Robert E. Lee Bridge



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10



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London Avenue Canal North Near the Robert E. Lee Bridge



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London Avenue Canal North Near Robert E. Lee Bridge
Across from Breach



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London Avenue Canal North Near Robert E. Lee Bridge Across from Breach



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London Avenue Canal North Near Robert E. Lee Bridge Across from Breach



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Breach on Inner Harbor Navigation Canal



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Breach on Inner Harbor Navigation Canal



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Overtopping along Gulf Intracoastal Waterways



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Scour on Mississippi River Gulf Outlet



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Scour on Mississippi River Gulf Outlet



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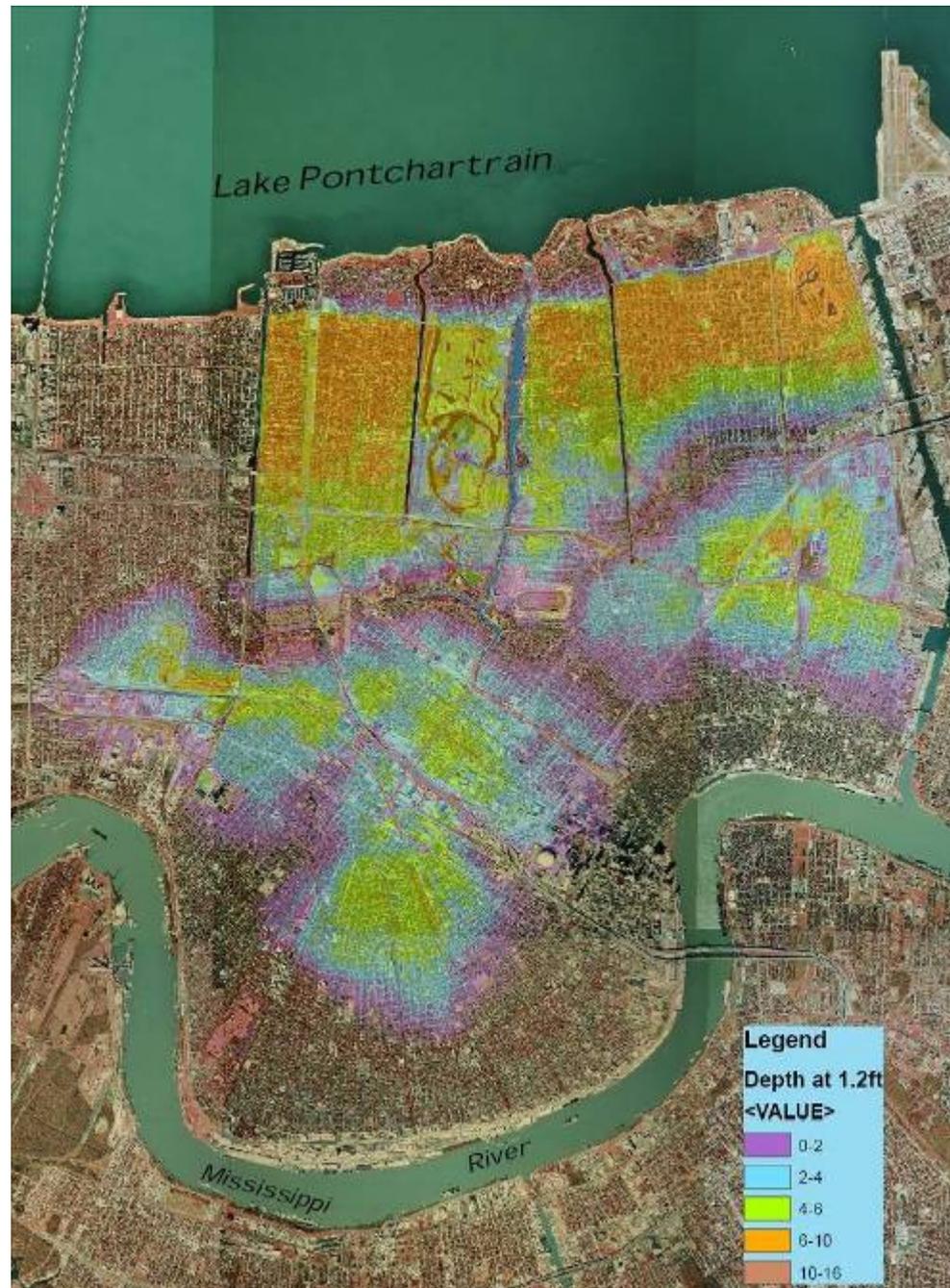
Perishable data

- **High Water Marks:**
 - Observed high water levels, location, x,y,z, description, photos, date, time, reference point for survey
- **Time history of events; Timeline of Katrina and Observed System Response**
 - Temporal hurricane track, observations: surge, flooding, wave heights, currents (direction, magnitude), pump operation, levee damage, debris in canals (quantity, composition), barges, boats, etc.



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New Orleans

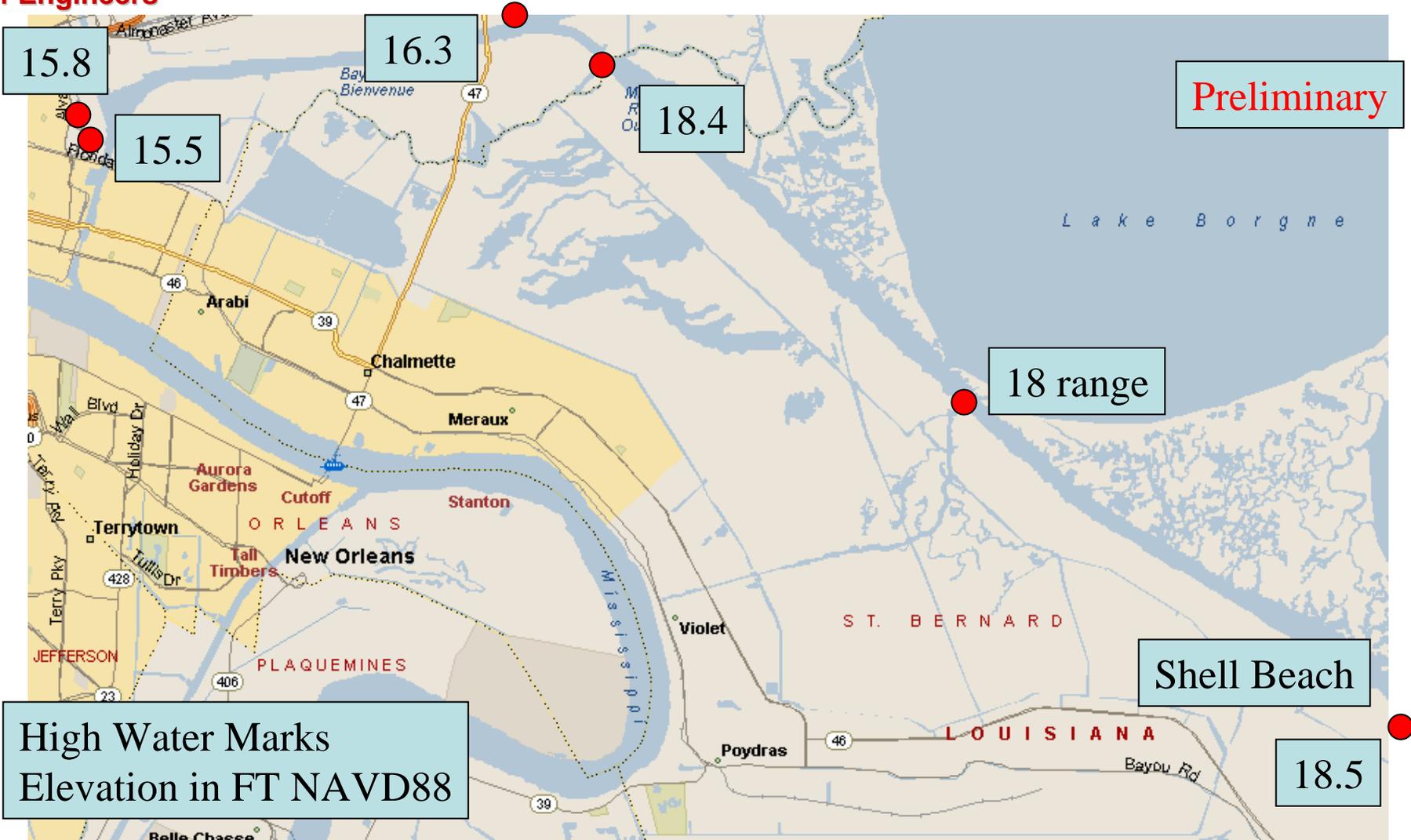


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St Bernard and 9th Ward



High Water Marks
Elevation in FT NAVD88



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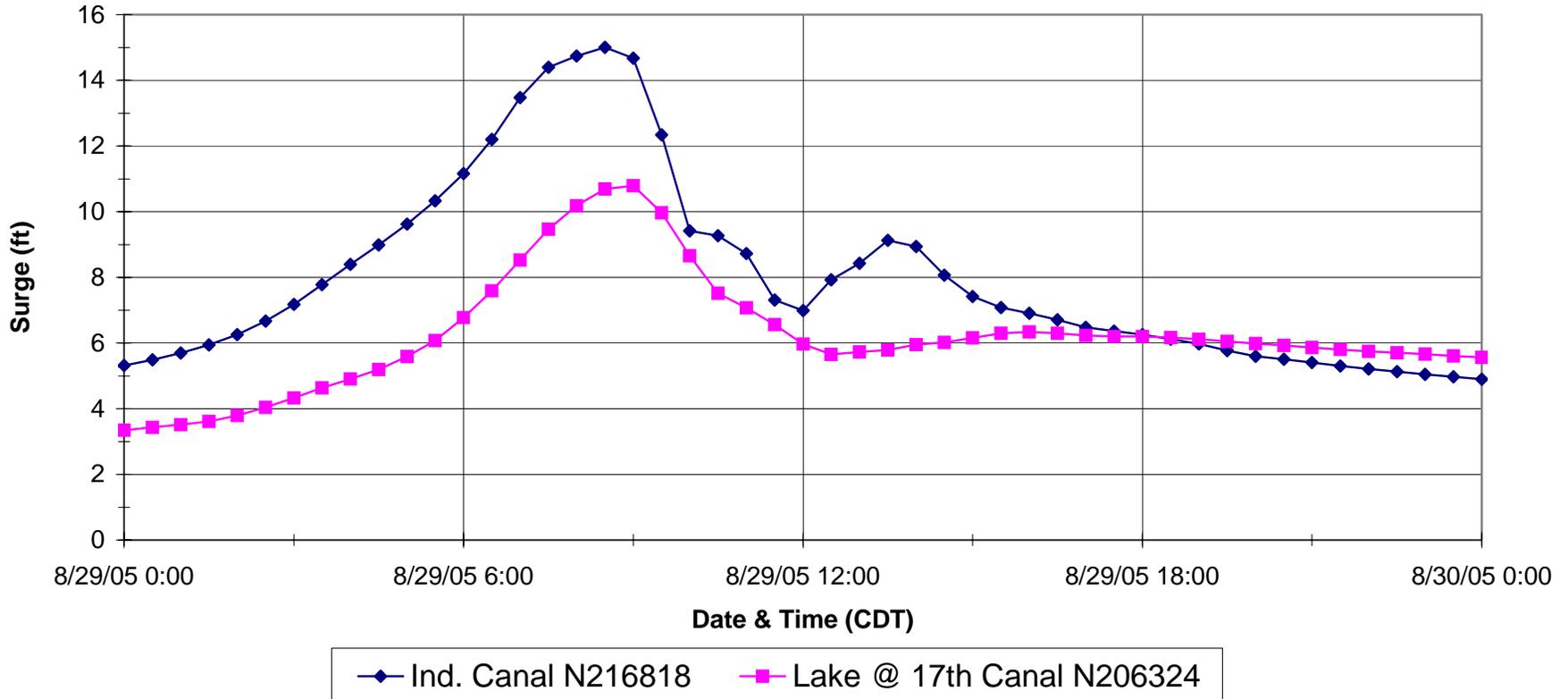
IHNC





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Hurricane Katrina Surge at the Industrial Canal & Lake at the 17th Street Canal
IC-Peak at 0830 AM; Lake Peak 0900 AM





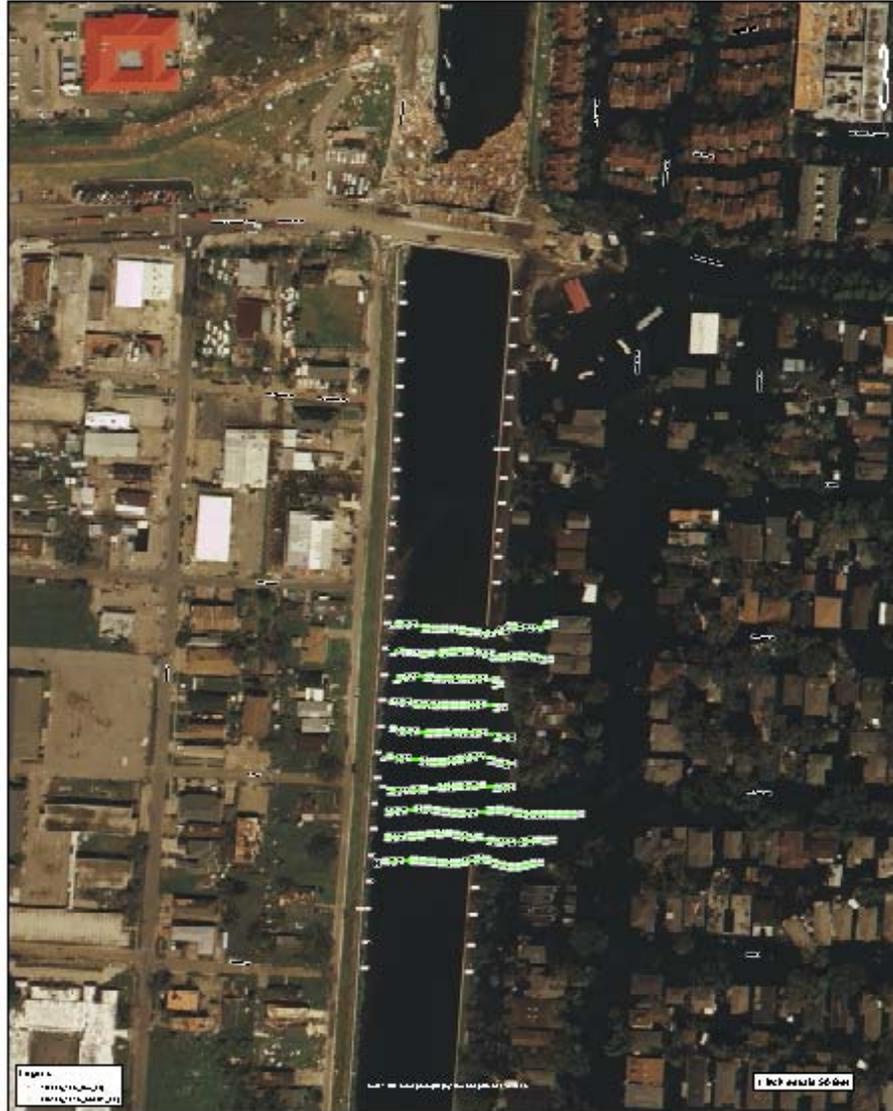
Perishable data

- **Bottom Profile of Canals (Scour Surveys):**
 - Bathymetric surveys, Multi-beam sonar survey - project/site, location, x,y,z, description, date, time, reference point for survey
- **Eyewitness Accounts of the failures**
 - Project/site, location, x,y,z, description, date, time, reference point for survey; Interviews with USACE operators and emergency ops personnel concerning system performance



17th Street - Multi-Beam Sonar Survey

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Background/System data

- **Another team was deployed to collect background information:**
 - **Terrain and geology of the area and the corresponding topographical**
 - **Geological conditions along the system**
 - **Hydrological conditions of the area**
 - **Subsystem configuration (basins)**
 - **History of the construction, design criteria and approach, actual design documents, the as-built drawings for the system, and the inspection and maintenance records**



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New Data

- **Data collection is a continuing activity:**
 - **Surveying to support the geodetic vertical datum assessment, the high water marks, and the elevations of specific system components**
 - **Interviews to support creation of the flooding timeline**
 - **Cone penetration tests, soil borings and soil laboratory testing to support the structural performance evaluation**
 - **Pump Station Characterization**



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Accomplishments to date

• Data Requirements Matrix

- **89 Data items**
 - 22 Perishable data items
 - 32 Background data items
 - 35 New data items
- **Source of data**
- **Available date**
- **Needed by date for each Task**
- **Stored in Groove workspace**
- **Provided in Appendix H of IPET Report 1**



Microsoft Office
Excel Worksheet



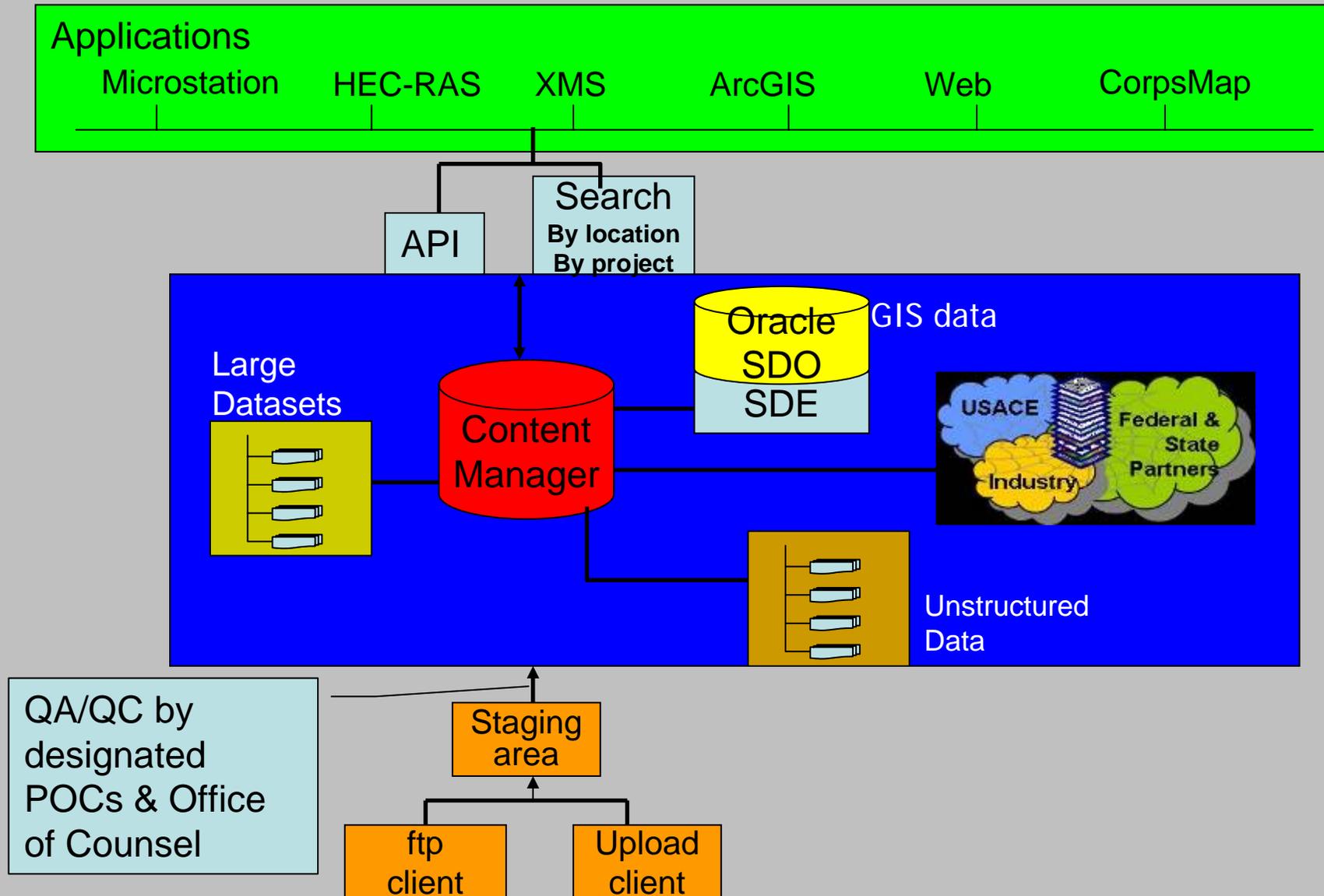
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Data Management

- **Assemble a comprehensive set of data and information about the conditions before and after Hurricane Katrina as well as a complete history of the hurricane protection projects' construction and maintenance.**
- **This collection of data will serve as the repository for information and analytic results developed throughout the Performance Evaluation.**



Data Storage and Management Architecture





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Data Repository Taxonomy

Project Names

- **Flood Control Mississippi River and Tributaries**
- **Grand Isle and Vicinity**
- **Inner Harbor Navigation Canal**
- **Lake Pontchartrain LA and Vicinity**
- **Mississippi River Gulf Outlet Channel**
- **New Orleans to Venice**
- **Pontchartrain Beach Floodwall-Levee Project**
- **Southeastern Louisiana Flood Control Project (SELA)**
- **Westbank in the Vicinity of New Orleans**



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Data Repository Taxonomy (continued)

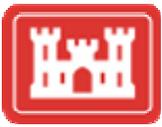
- **Basemap**
- **Climate**
- **Contracts**
- **Design Memos and Reports**
- **Field Investigations**
- **Geology**
- **Hydrology**
- **Laboratory Test Data**
- **Modeling and Assessment**
- **Periodic Inspections**
- **Soils**
- **Structures**
- **Transmissions**



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Accomplishments to date

- **Public web site – <https://ipet.wes.army.mil>**
 - Opened on Nov. 2, 2005
 - Includes link to MVN Electronic Bid Solicitation website
 - weekly metrics provided to IPET leadership
 - 236 documents posted (as of 12/23/2005)
 - Average daily # of hits = 99 (as of 12/23/2005)
 - Average weekly number of hits = 635 (as of 12/23/2005)
- **IPET Data Repository -<https://erdcpcw.erdcd.usace.army.mil/wel>**
 - access controlled – all IPET members have access
 - 930 documents posted (as of 12/28/2005)
 - 3 primary components:
 - GIS data – leverages the CorpsMap corporate database at USACE CPC
 - Unstructured data – Microsoft SQL Server database managed by Bentley ProjectWise
 - Large data sets – terabyte server connected to Oracle SDO database
 - **Bentley ProjectWise** – provides the overall metadata management for all 3 data components



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IPET Public Website

New Orleans Hurricane Protection Projects Data - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Links AOL for Broadband Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Address <https://ipet.wes.army.mil/> Go

New Orleans Hurricane Protection Projects Data

Home

DM05 Chalmette Area Plan Detail Design Bayou Bi...
 DM06 Vol 1 Rigolets Control Structure and Closure I...
 DM06 Vol 2 Rigolets Control Structure and Closure I...
 DM07 Detail Chef Menteur Pass Cont Struc and Clos...
 DM08 Vol 1 Detailed Rigolets Lock (Sept 1973) r.p...
 DM10 Corrosion Protection (Mar1969) r.pdf
 DM12 Revised Seabrook Lock Sources of Constructi...
 DM12 Sources of Construction Materials (Jan 1966)
 DM13 Vol I GDM Orleans Parish Lakefront Levee V...
 DM14 Citrus Lakefront Levee (July 1984).pdf
 DM15 GD New Orleans East Lakefront Levee - Pari...
 DM16 Gen Design New Orleans East Levee South Po...
 DM17 Vol I General Design Jefferson Parish Lakefr...
 DM17A Gen Design Jefferson Par St. Charles Par Re...
 DM18 Vol I Gen Design St. Charles Par N of Airline I...
 DM18 Vol II Gen Design St. Charles Par N of Airline...
 DM19 Vol 1 GD Orleans Ave Outfall Canal (Aug 198...
 DM19 Vol 2 GD Orleans Ave Outfall Canal (Aug 198...
 DM19A Supp1 GD London Ave Outfall Canal Fronti...
 DM19A Supp2 GD London Ave Outfall Canal Fronti...
 DM19A Supp2 GD London Ave Outfall Canal Fronti...
 DM19A Vol 1 GD London Ave Outfall Canal (Jan 15...
 DM19A Vol 2 GD London Ave Outfall Canal (Jan 15...
 DM20 Supp1 - GD 17th St Outfall Canal (Metsairie B...
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 DM20 Vol 1 - GD 17th St Outfall Canal (Metsairie B...

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**LAKE PONTCHARTRAIN, L.A. AND VICINITY
LAKE PONTCHARTRAIN
HIGH LEVEL PLAN**

**DESIGN MEMORANDUM NO. 19
GENERAL DESIGN**

**ORLEANS AVENUE
OUTFALL CANAL**

IN THREE VOLUMES
VOLUME I

8.47 x 10.96 in 1 of 443

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IPET Data Repository

ProjectWise Web Explorer Lite 2004 Edition - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Links AOL for Broadband Customize Links Free Hotmail Windows Windows Marketplace Windows Media

Address https://endpww.endc.usace.army.mil/WEL/index.html

ProjectWise

Log Out: All

Databases

- IPET_Project
- Documents
- DataTransfer
- ProjectManagement
- Region Wide Data
- Flood Control MS River
- Grand Isle and Vicinity
- Inner Harbor Navigation
- Interagency Performance
- Lake Pontchartrain LA a
 - Basemap
 - Climate
 - Contracts
 - Design Memoranda
 - Field Investigations
 - Geology
 - Hydrology
 - Laboratory Test Data
 - Modeling and Asses
 - Periodic Inspections
 - Plans and Specific
 - Reports
 - Soils
 - Structures
 - PostStorm
 - PreStorm
 - Transmissions
 - Misc Reports
 - Mississippi River Outlet
 - MS River Out Outlet (M
 - New Orleans to Venice
 - Pontchartrain Beach Fic
 - SELA Flood Control Pro
 - Staging Area
 - Westbank in the Vicinity
 - Westwego to Harvey Ca
- Searches
- Document Pool

Datasource Folder Document

Documents Geospatial

NAME

- Chalmette Area Levee
- Jefferson & St Char
- NO East & Citrus Le
- NO Lakefront Levee
- Overall Status of NKG
- Status of NO Levee

Bentley VPR Viewer - Microsoft Internet Explorer

ProjectWise

File View Plot Pleasure Tools Help

LAKE PONTCHARTRAIN, LA, AND VICINITY HURRICANE PROTECTION PROJECT

NEW ORLEANS LEVEE

NEW ORLEANS EAST

NEW ORLEANS

LEGEND:

- LEVEE - FEDERAL
- LEVEE - STATE
- FLOODWALL - FEDERAL
- FLOODWALL - STATE
- LEVEE - PROJECT
- FLOODWALL - PROJECT

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Questions

